

## Study: LAIV less effective against H1N1 flu than IIV in past seasons

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A new data analysis backs up Centers for Disease Control and Prevention (CDC) and Academy decisions not to recommend nasal spray flu vaccine for the last two flu seasons.

The data show the live attenuated influenza vaccine (LAIV4, FluMist) was significantly less effective against influenza A/H1N1 than the traditional flu shot (inactivated influenza vaccine [IIV]).

Small sample sizes have limited the usefulness of individual vaccine effectiveness studies, so CDC researchers combined five studies and reported the findings in “Live Attenuated and Inactivated Influenza Vaccine Effectiveness” (Chung JR, et al. *Pediatrics*. Jan. 7, 2019, <http://pediatrics.aappublications.org/content/early/2019/01/03/peds.2018-2094>).

The studies span the 2013-'14 through 2015-'16 seasons and include 17,173 patients ages 2-17 years. About a quarter tested positive for influenza. Of those, 37% of the strains were A/H3N2 and 25% were A/H1N1pdm09.

Overall, IIV was 51% effective and LAIV4 was 26% effective, according to the study. The main differences were seen in protection against A/H1N1. IIV had an effectiveness of 67% against this strain compared to 20% effectiveness for LAIV4. Those who received LAIV4 were twice as likely to get the flu as those who received IIV. Researchers said differences in previous season vaccination did not explain the findings.

The two vaccines provided similar protection against A/H3N2. LAIV4 was 66% effective against influenza B compared to 52% for IIV, but the difference was not significant.

The data support the CDC and AAP decisions not to recommend LAIV4 in 2017-'18 or 2016-'17 over concerns about effectiveness. The LAIV4 manufacturer has since changed the vaccine strain to A/Slovenia and presented updated data on replicative fitness and shedding to the CDC's Advisory Committee on Immunization Practices (ACIP) last year.

Based on that data, ACIP recommends people are vaccinated this season with IIV, LAIV4 or recombinant influenza vaccine and does not express a preference. However, the [Academy says](#) IIV should be the primary vaccine choice due to past inferiority and unknown current effectiveness of LAIV4. LAIV4 may be used for children who would not otherwise receive a vaccine. Both groups stress the importance of everyone 6 months and older being vaccinated.

### Current flu season

The new LAIV4 formulation may be put to the test this season as A/H1N1 has been the predominant circulating strain so far.

The strain also tends to be especially tough on children. Two child deaths were reported in the last week of December, both from this strain, according to the [CDC's weekly FluView report](#). In total, there have been 13 deaths, which are expected to increase. Last season, a record-breaking 185 children died.

Children under 5 years have been hospitalized at the highest rates this season, 14.5 per 100,000 children compared to 5.4 per 100,000 people across all ages. About 4.1% of outpatient clinic visits in the last week of December were for flu, and the virus is considered widespread in 24 states.

### **Resources**

- [Related commentary, "Live Attenuated Influenza Vaccine: Will the Phoenix Rise Again?"](#)
- [AAP policy "Recommendations for Prevention and Control of Influenza in Children, 2018-2019"](#)
- [AAP News story "How to code for flu vaccine, administration in 2018-'19 season"](#)
- [Information from the CDC about flu](#)
- [Information for parents on flu vaccine from HealthyChildren.org](#)
- [AAP News stories on flu](#)
- [Pediatrics seasonal flu article collection](#)

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